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Implantation of titanium dioxide with transition metalions

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Abstract

A review about applications of the low energy implantation of titanium dioxide with various transition metal ions is presented. In dependence on type of implanted ions modified titanium dioxide could be found as perspective material for magnetic data storage, nano-catalysts and optics. Solid solutions with implanted magnetic ions demonstrated anisotropic ferromagnetism at room temperature. Nanoparticles synthesized in titanium dioxide by implantation with noble metal ions give possibilities to fabricate plasmonic and optical composites. Different parameters and condition of ion implantation technology and realized specific properties of irradiated titanium dioxide observed and discussed.